The Abnormal Pap Smear

Laurie Turenne-Kolpan, Maj, USAF, MC

Objectives

- Review the epidemiology of cervical cancer
- Review risk factors for cervical cancer
- Review screening recommendations
- Discuss the reporting of pap smear results using the Bethesda System
- Determine the appropriate management of abnormal pap smear results

Introduction

- The Papanicolaou (Pap) smear has been in use since 1941
- It is the single most effective cancer screening test to date
- Sensitivity is 30-89%

Epidemiology

- 3.5 million women have abnormal pap results in the US annually (about 7% of total paps performed)
- 4.4% of pap results are ASCUS
- In the US, 13,000 new cases of invasive cervical cancer per year
- 50% of women in the US with cervical cancer have never been screened
- 5-year survival rate for local disease is 92%
- 5-year survival for distant metastasis is 13%

Risk Factors for Cervical Cancer

- Early age at first intercourse (age <16)
- Multiple sexual partners
- Presence of STD, particularly HPV
- Immunosupression
- SMOKING!!!

The Human Papillomavirus (HPV)

- HPV is the leading etiologic agent in development of dysplasia
- HPV DNA is found in 95-100% of invasive cervical cancer (ICC) and 75-95% of high grade lesions (CIN II or III)
- Peak prevalence is 40% occurring between the ages of 20 and 29
- Condoms are not as protective against transmission of HPV as other STDs

(HPV – continued)

- High risk types – 16,18,31,33,35,39,45,51,52,56,58,59,68, 73,82
- Low risk types – 6,11,42,43,44, 54, 61,70,72,81
- Types 16 and 18 most prevalent in ICC
- Persistence of HPV infection is a key factor in progression to cancer

Screening – When to Begin?

- New guidelines! - ACOG, American Cancer Society (ACS), and US Preventive Services Task Force (USPSTF) all recommend screening starting 3 years after onset of sexual activity, or at the age of 21

Screening – When to end?

- ACOG – No set upper age limit
- USPSTF – 70, if have had 3 consecutive negative tests, and no abnormals in the last 10 years
- ACS – 65, if they are not at high risk and have adequate previous screenings
- After total hysterectomy for benign disease (ACOG adds also if no h/o CIN II or III)

How Often to Screen?

- **ACOG** – annually for all women under age 30 regardless of method (conventional vs. liquid)
  - Over age 30 can space to every 2-3 years IF
    - No history of CIN II or III
    - Not immunocompromised
    - Not HIV positive
    - Had no DES exposure
    - Have had 3 consecutive negative screens

How Often (Cont)?

- **ACS –** Annual with conventional cytology, or every 2 years with liquid based cytology
  - **After age 30, may increase interval to every 2-3 years IF**
    - **Had 3 consecutive negative screens**
    - **Not high risk**
    - **Not immunocomprimised**
- **USPSTF –** At least every 3 years

Which test to use?

- Conventional pap smear is about 60-80% sensitive for detecting a high grade lesion
- Newer tests including liquid-based paps and computerized re-screening have been shown in some studies to have a higher sensitivity, but lower specificity
- No prospective trials comparing conventional with new technologies in prevention of ICC or cost-effectiveness

Bethesda 2001

- Specimen type (conventional, liquid-based, etc)
- Specimen Adequacy
  - Satisfactory (describes presence or absence of endocervical/ TZ component and other quality indicators such as obscuring blood or inflammation
  - Unsatisfactory (reason specified)
- General Categorization
  - Negative for intraepithelial lesion or malignancy
  - Epithelial Cell Abnormality
  - Other (endometrial cells in a woman over 40)

Absent Endocervical Component

- Expert task force has recommended that repeat cytology can be performed in 12 months. Should repeat in 6 months IF:
  - >/= ASCUS pap without 3 consecutive normals
  - H/O atypical glandular cells of unknown origin
  - + Hi risk HPV in the last 12 months
  - Inability to visualize or sample the endocervical canal
  - Immunosupression
  - Non-compliant patient

Bethesda 2001 Negative for Intraepithelial lesion/malignancy

- Organisms
  - *Trichomonas vaginalis*
  - Fungal organisms
  - Shift in flora suggestive of BV
  - Cellular changes c/w Herpes
  - *Actinomyces* spp.
- Other non-neoplastic findings (optional)
  - Reactive cellular changes
  - Glandular cells post hysterectomy
  - Atrophy

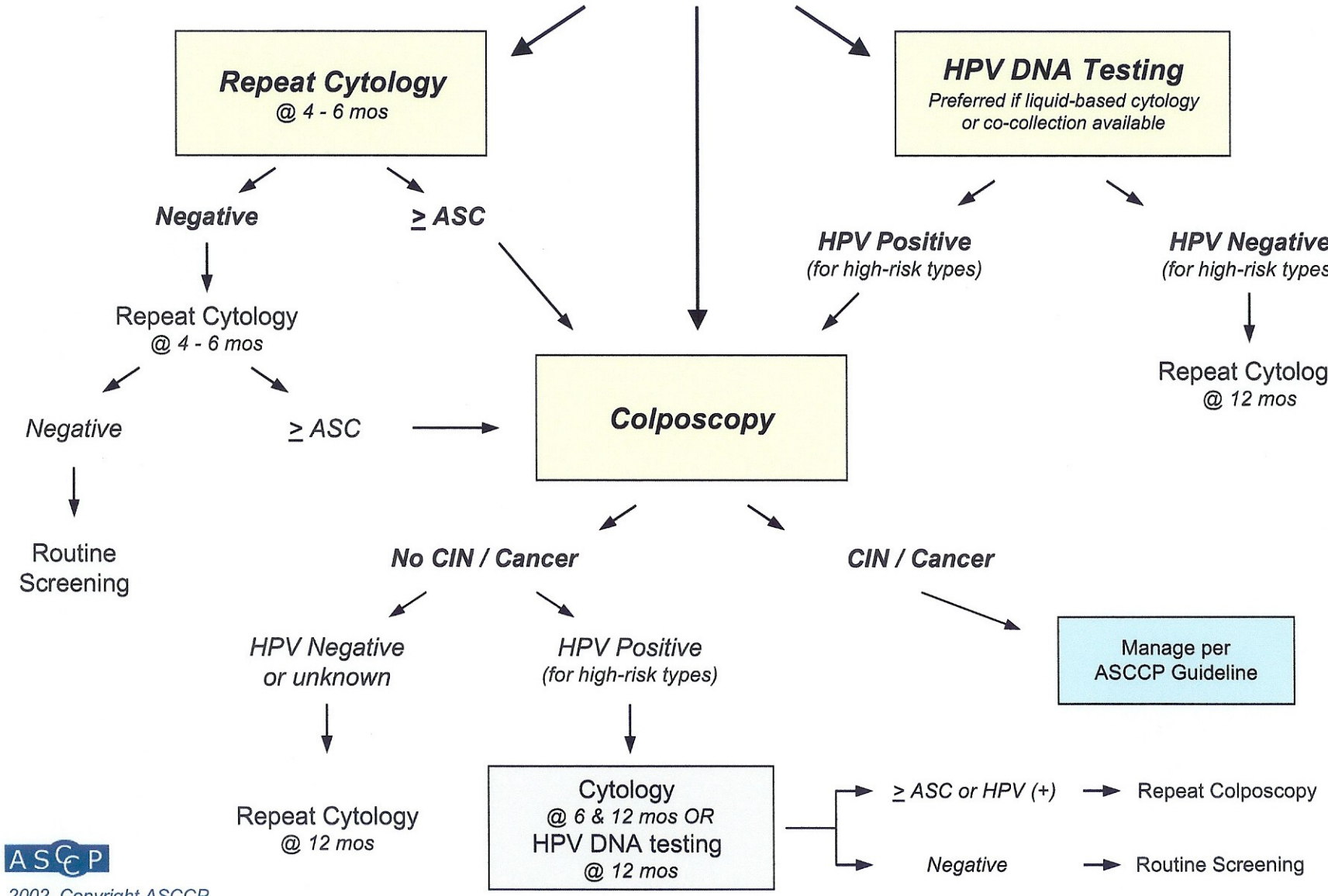
Bethesda 2001 – Epithelial cell abnormalities - Squamous

- Atypical squamous cells
  - ASC-US (of undermined significance)
  - ASC-H (cannot exclude HSIL)
- Low grade squamous intraepithelial lesion (LSIL) – mild dysplasia/ CIN I
- High grade squamous intraepithelial lesion (HSIL) – moderate and severe dysplasia/ CIN II/III
- Squamous cell carcinoma

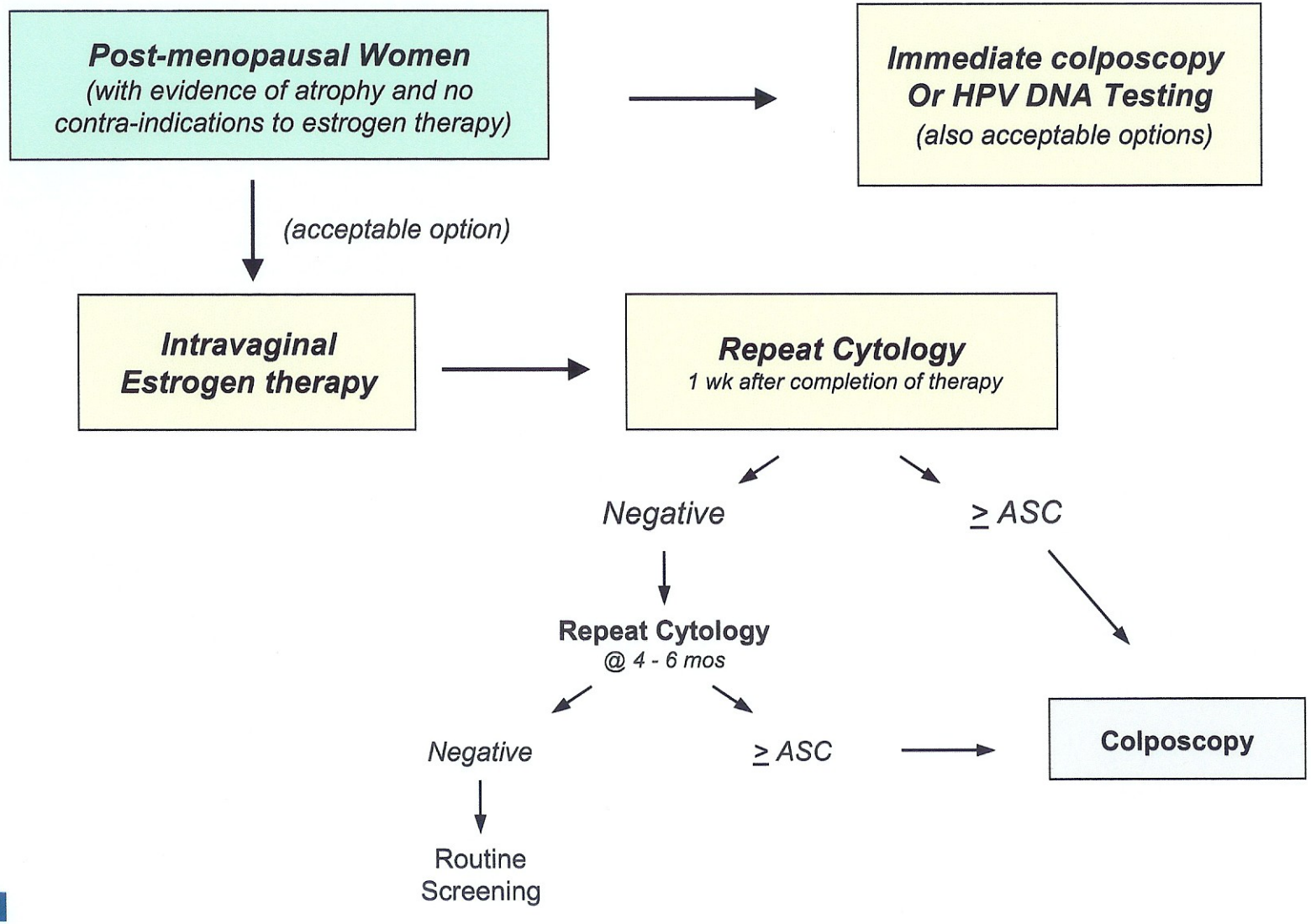
Bethesda 2001 – Epithelial cell abnormalities - Glandular

- Atypical
  - Endocervical (NOS)
  - Endometrial (NOS)
  - Glandular (NOS)
- Atypical
  - Endocervical, favor neoplastic
  - Glandular, favor neoplastic
- Endocervical adenocarcinoma *in situ*
- Adenocarcinoma – endocervical, endometrial, extrauterine, NOS

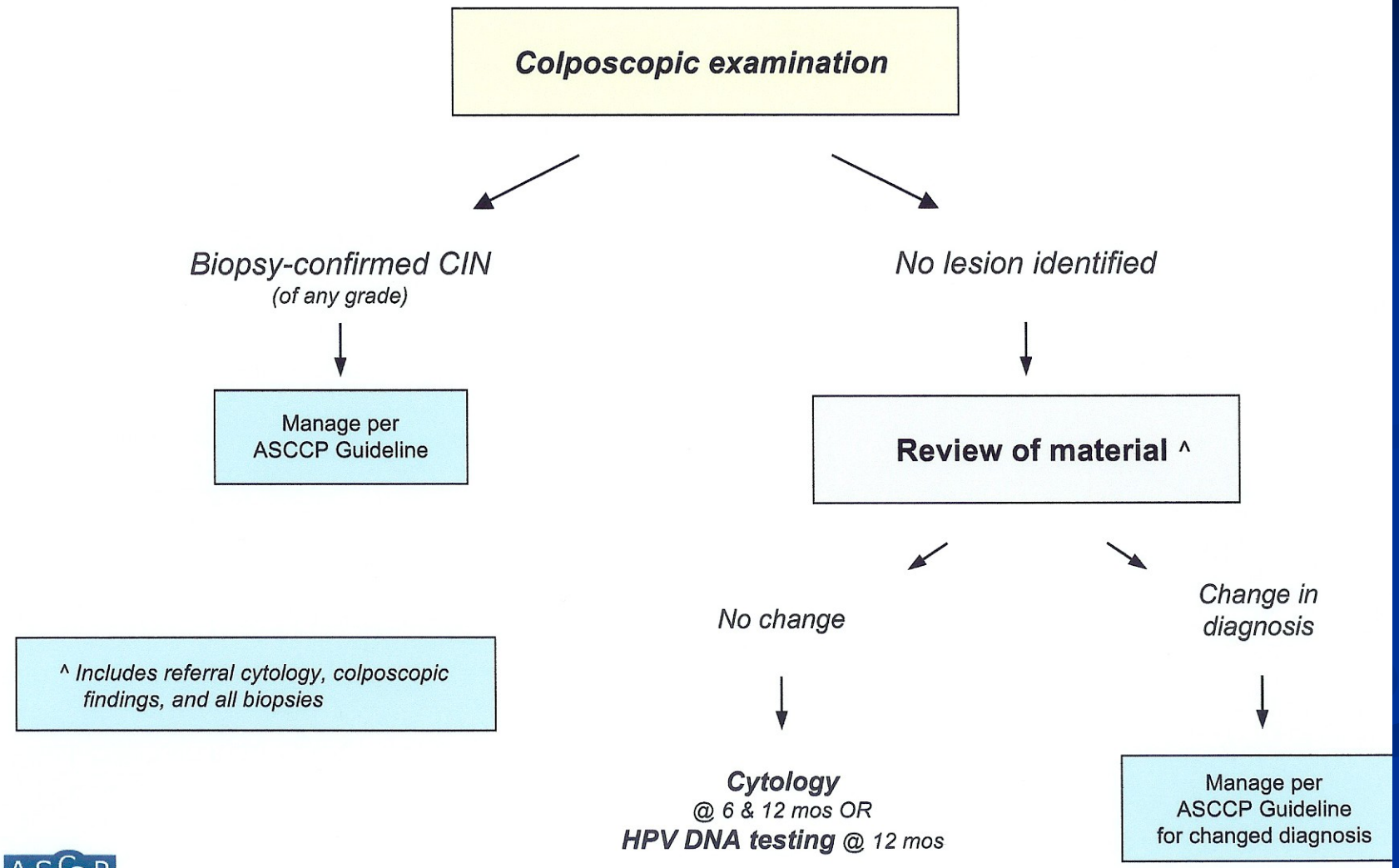
Management of Women with Atypical Squamous Cells of Undetermined Significance (ASC-US)



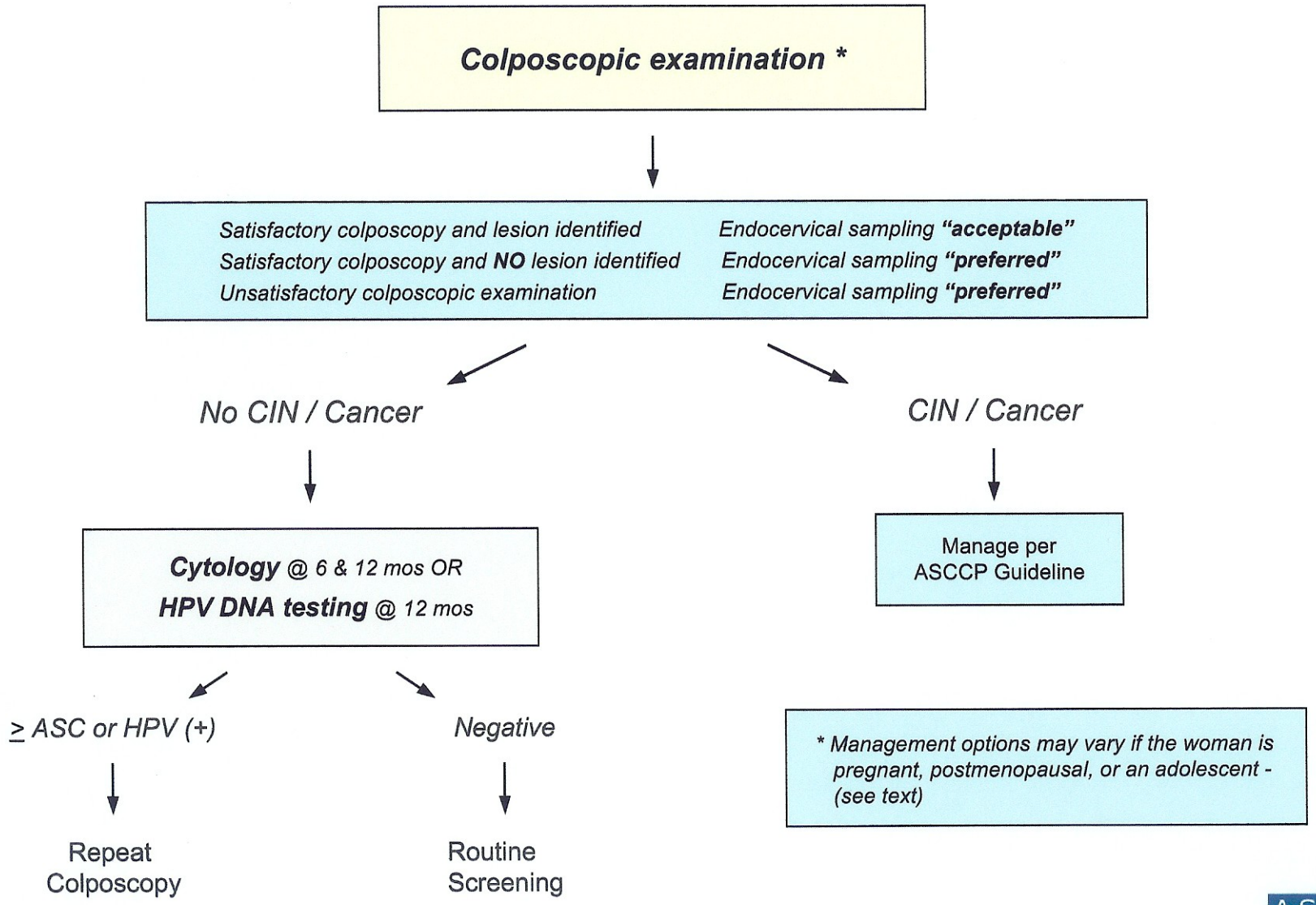
Management of Women with Atypical Squamous Cells of Undetermined Significance (ASC-US) In Special Circumstances



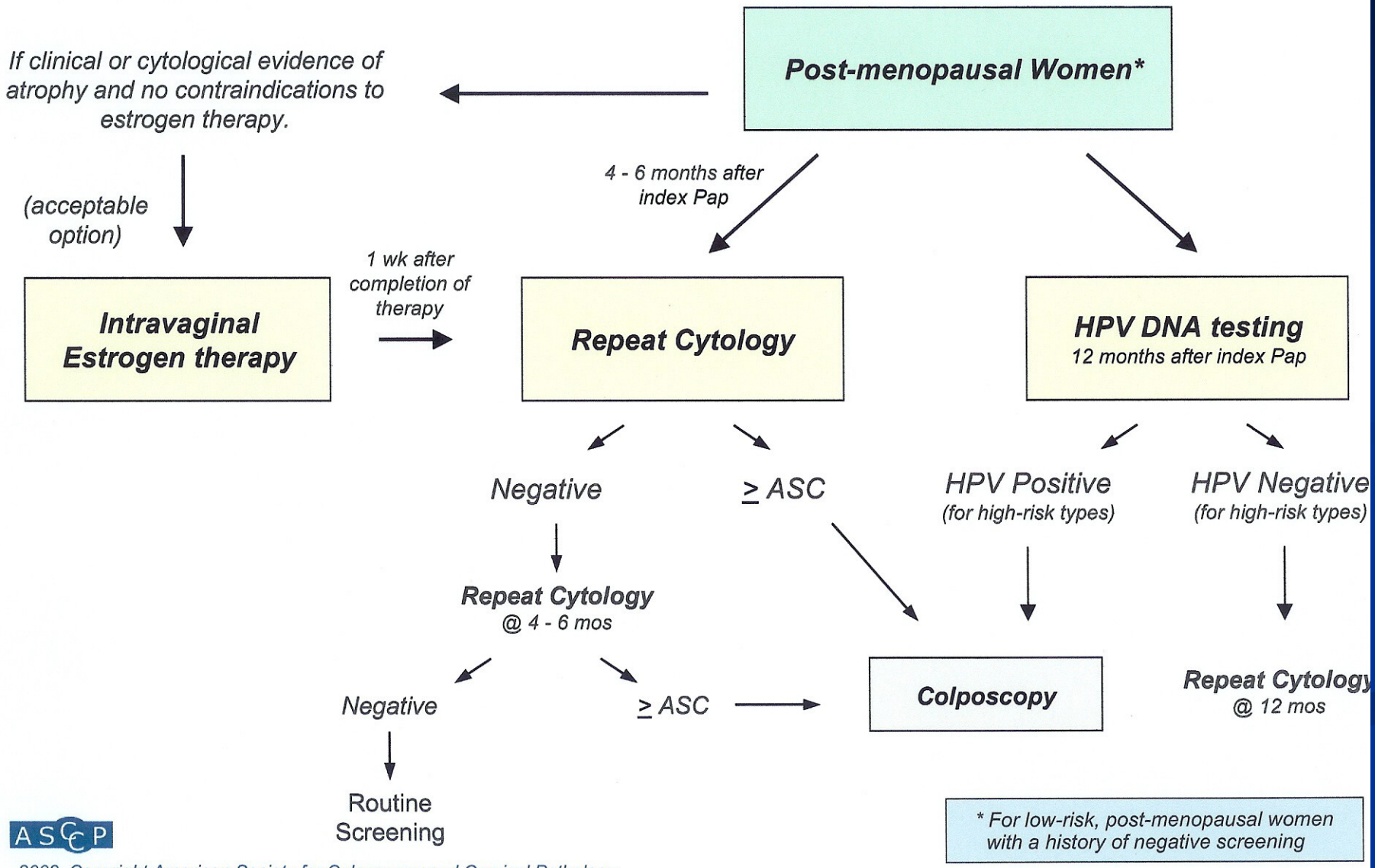
Management of Women with Atypical Squamous Cells: Cannot Exclude High-grade SIL (ASC - H)



*Management of Women with Low-grade Squamous Intraepithelial Lesions (LSIL) **

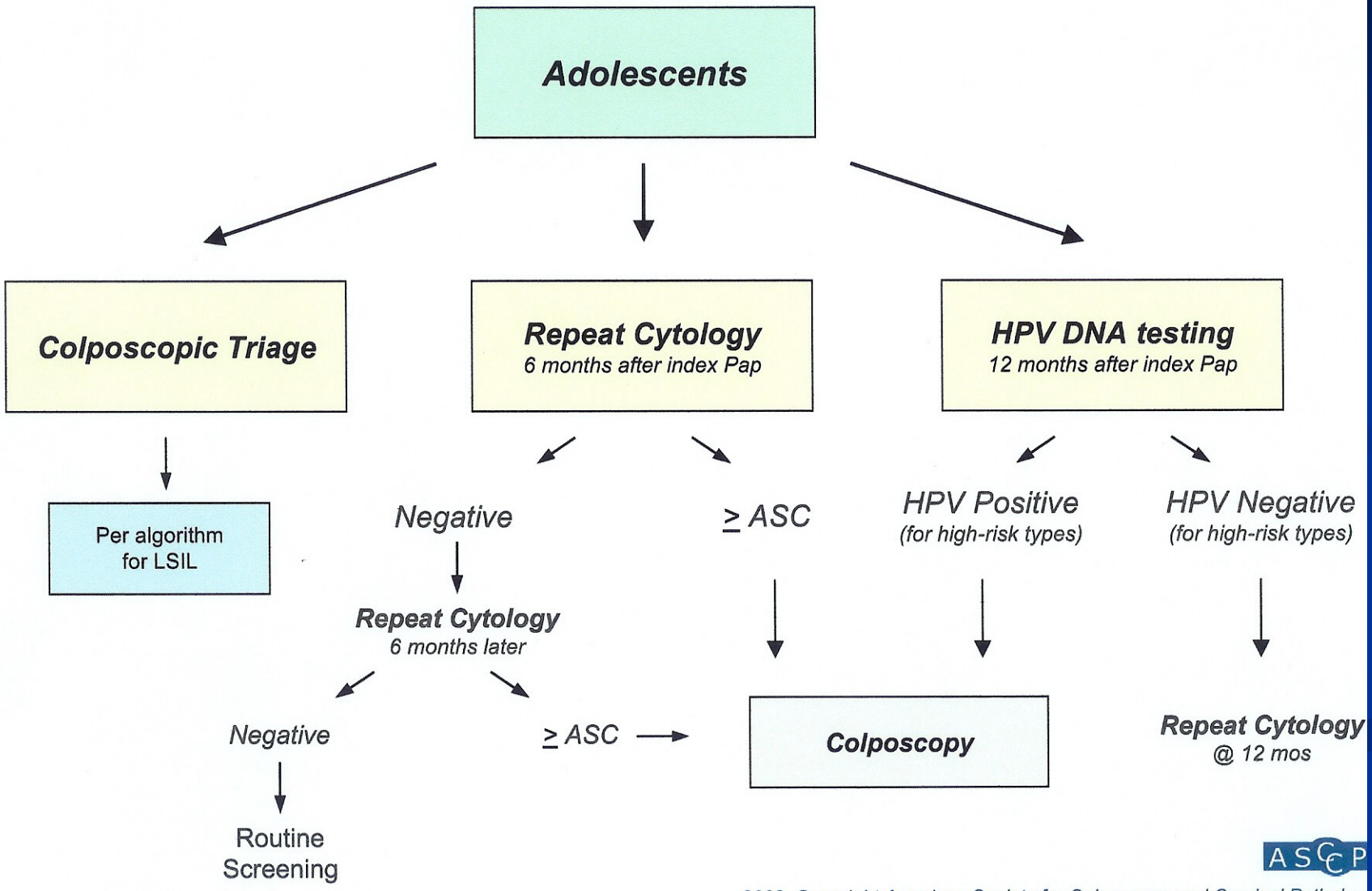


Management of Women with Low-grade Squamous Intraepithelial Lesions In Special Circumstances

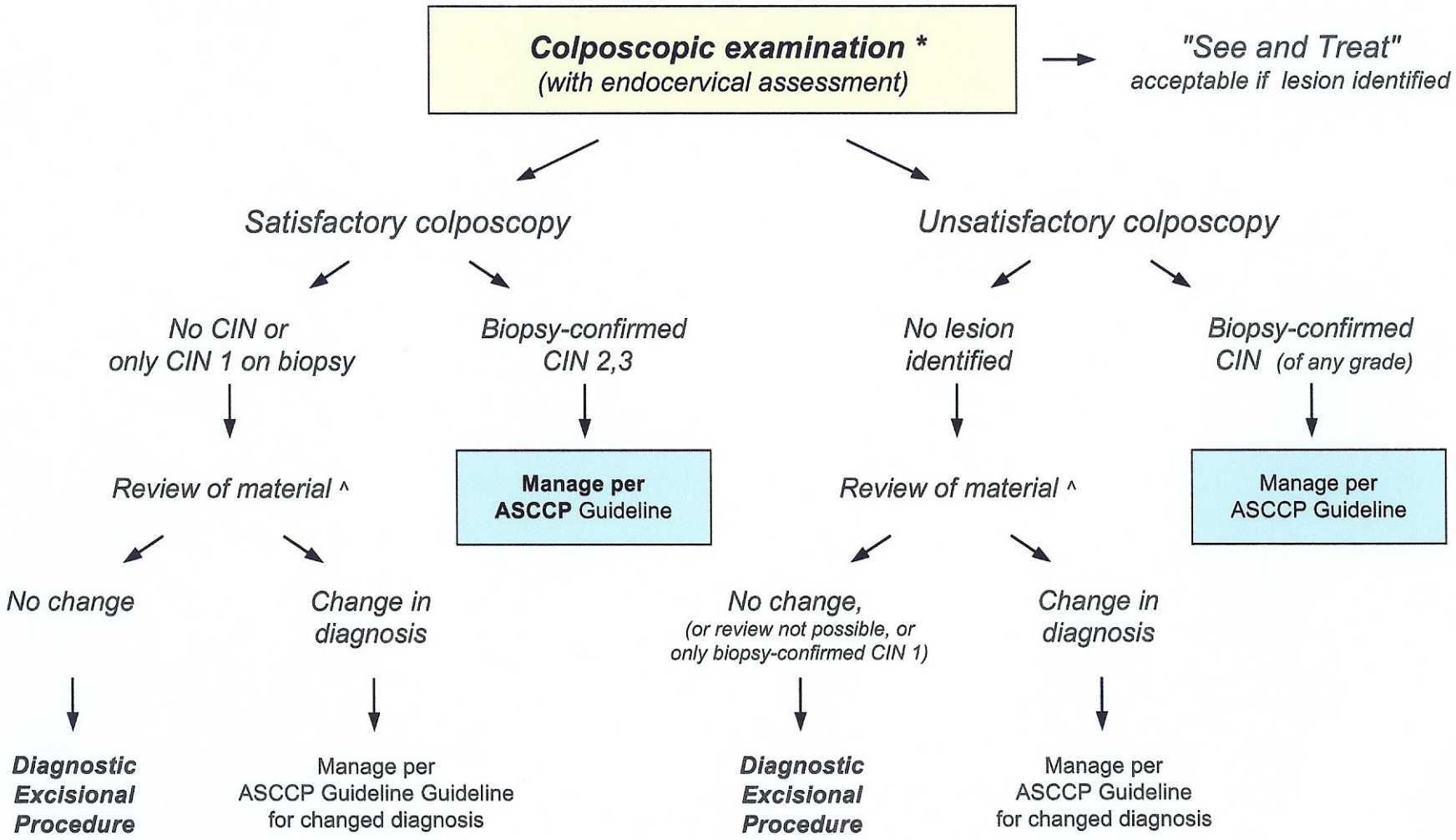


ASCCP

Management of Women with Low-grade Squamous Intraepithelial Lesions In Special Circumstances



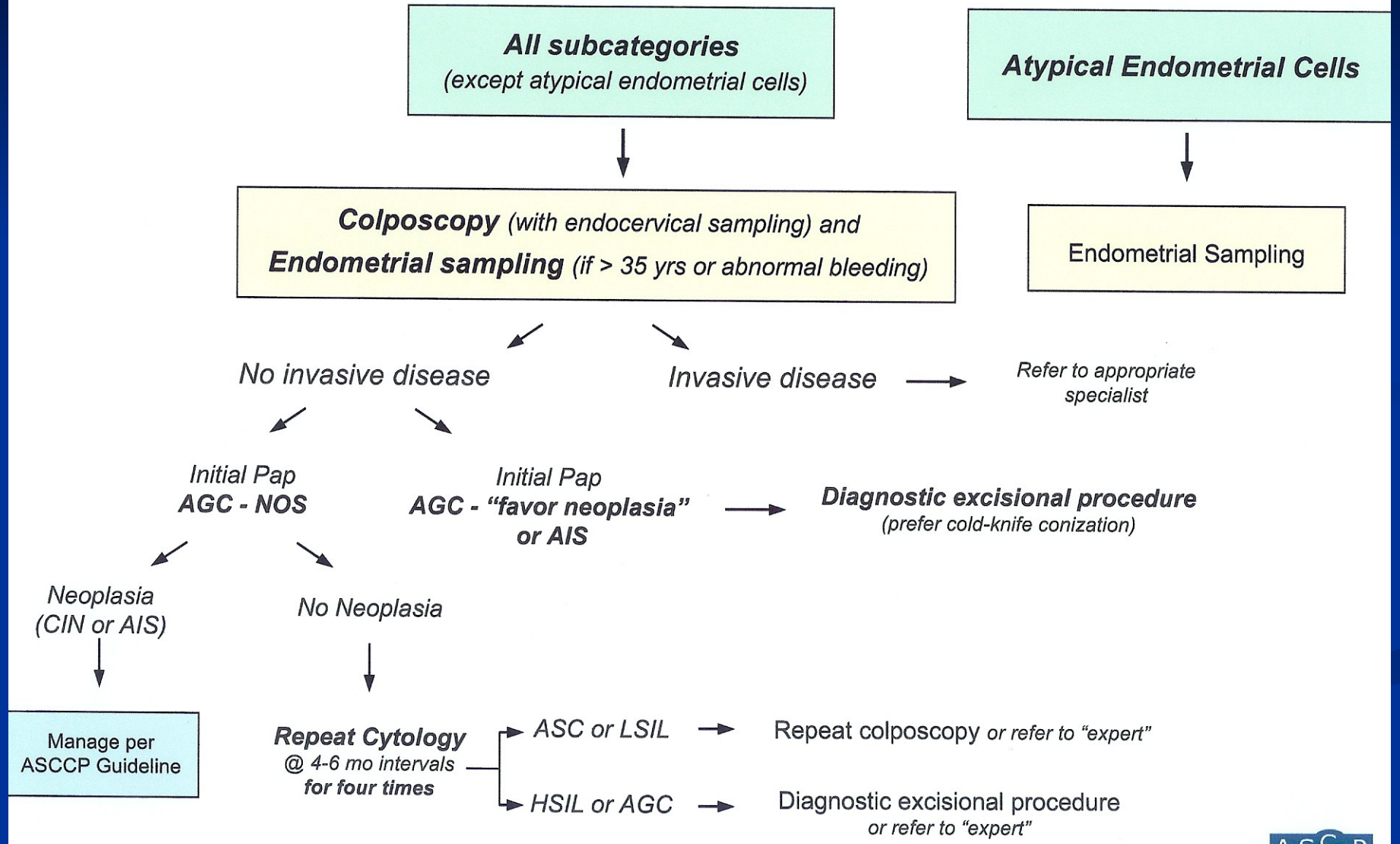
Management of Women with High-grade Squamous Intraepithelial Lesions (HSIL) *



^ *Includes referral cytology, colposcopic findings, and all biopsies*

* *Management options may vary if the woman is pregnant, postmenopausal, or an adolescent*

Management of Women with Atypical Glandular Cells (AGC)



Summary

- Pap smear testing – single most effective cancer screening test to date
- Risk factors: HPV and other STDs, early intercourse, multiple partners, immunosupression, smoking
- Begin screening 3 yrs after onset of sexual activity, or at age 21
- Persistence of HPV is key factor in developing high grade dysplasia/ICC
- HPV typing can be used to triage ASCUS paps
- Remember ASCCP clinical guidelines for management of cytological abnormalities

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